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This thesis examines the possible strategies available for the prosecution of a time-critical decisive halt. The concept of a decisive halt through the rapid application of military power from the air is new to United States Air Force doctrine and so research into targeting strategies is necessary.

This paper first looks at the concept of a decisive halt in terms of the end state desired. It then develops, by looking at past and present theorists and their theories, a variety of strategies that could be used to achieve these objectives. The final part of the study looks at each of these strategies for its applicability to a decisive halt where time is a critical factor.

The study produces a series of factors that should be considered when planning for a decisive halt and demonstrates how some of the options do not match well with this type of operation. The study also shows that there are other options that may be used very effectively, depending on the situation. The paper does not reach a final conclusion on the one best strategy though it does attempt to prioritize them for a planner's consideration.

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TARGETING CONSIDERATIONS FOR A TIME-CRITICAL DECISIVE HALT

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

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MASTERS OF MILITARY ART AND SCIENCE

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

TARGETING CONSIDERATIONS FOR A TIME-CRITICAL DECISIVE HALT by MAJ Christopher E. Plamp, USAF, 63 pages.

This thesis examines the possible strategies available for the prosecution of a time-critical decisive halt. The concept of a decisive halt through the rapid application of military power from the air is new to United States Air Force doctrine and so research into targeting strategies is necessary.

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ACKNOWLEDGMENTS

The author would like to thank his committee for the patience and guidance they showed in dealing with the production of this thesis. A special thanks also goes to my family for putting up with late nights and many mutterings about airpower.

This thesis is intentionally kept at the theoretical level in regards to the application of airpower. If it causes someone to review his or her thoughts on airpower or to see a targeting strategy differently or more completely, then it has achieved it purpose.

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CHAPTER 1

INTRODUCTION

> The grouping of (target sets), and determining the order in which they are going to be destroyed is the most difficult and delicate task in aerial warfare, constituting what may be defined as aerial strategy.
>
> Italian Air Marshal Giulio Douhet
> *Command of the Air*

Since the first use of the airplane in war, airpower has played an increasingly important role in warfare. It has progressed from being a platform solely for observation of the battlefield, to a supporting fire, to a form of warfare where it may be used in exclusion of the rest. Throughout this time, the basic premise on the flow of war has not changed. This traditional view of war and the way in which its campaigns are phased starts with an operation to halt the enemy, a buildup of forces, and then a counterattack (AFDD-1 1997, 42). The counterattack, in this timeline of war, is the decisive action, and historically has been done with overwhelming ground combat power. In recent years, a dramatic increase in weapons accuracy and lethality has started a change, or possibly a revolution, in the way some theorists, military planners, and politicians think war will be fought. This new way of thinking is challenging the traditional view of warfare.

In the past few years, technological advances in airpower have lead to this increase in weapons accuracy and lethality. The theories on how to apply airpower have undergone a parallel change trying to keep pace with the technological advances. While the overarching theories on how best to apply airpower have remained relatively

constant, namely to affect the enemy by applying power from the third dimension, the actual ability of the aerial weapons used to perform this has changed dramatically.

Primary Question

The question most recent airpower theorists want to answer is, How can the advanced capabilities of modern air systems best be applied to achieve military and political goals? In the U.S.'s most recent military actions, airpower was used to prepare a battle space in Desert Storm in preparation for a ground assault and to solve a crisis in Kosovo with only an air campaign. With these successful examples as a springboard, the U.S. Air Force has put forward the concept of a decisive halt. A decisive halt occurs when airpower is used to culminate a conflict before a ground force is brought to bear upon the enemy (AFDD1 1997, 42). This is contrary to the traditional view of a campaign. In a decisive halt phase airpower, rather than overwhelming ground force, causes the enemy to culminate.

The first question this thesis will answer is, What exactly is the goal of a decisive halt phase? According to current U. S. Air Force doctrine, it is designed to culminate the enemy through the application of airpower. Doctrine also states that this will be the decisive phase (AFDD-1 1997, 42). The question is, What is really meant by this? The new view of warfare is expressed in a section entitled, "A New View of Conflict," and is trying to look into the future and does not give specifics on how a decisive halt phase is supposed to be accomplished. This paper will answer this by looking at the definition of culminate, both in joint doctrine and the traditional military sense, and also what is actually being attempted during this phase of the operation. Once this has been deduced, the thesis will look at some of the specifics.

The ultimate question to answer is, Whether a decisive halt can be accomplished? To determine this, the operation must be taken apart into its components and evaluated to see how airpower can be applied. One of the first steps to see, if a decisive halt can be accomplished, once what it is trying to do has been deduced, is to look at what considerations there should be in the targeting process. If the considerations of the targeting process are married with the instruments of airpower and tempered by political situation and the national will, the answer to whether a decisive halt can be accomplished might be realized.

From the earliest essays on airpower on, there has been much written about targeting. Many of the early theories dealt solely with the strategic level of war. As early as 1921, in *Command of the Air*, Giulio Douhet wrote about striking at whatever point would stop the enemy's offensive power (Douhet 1983, 16). Theories regarding the application of airpower have changed as technology changed and campaigns happened. Operations, such as daylight precision bombing in World War II, the linebacker campaigns in Vietnam, and Desert Storm, have all influenced airpower theory. Most of these theories, however, only discuss the application of airpower at the strategic level of war.

On the tactical level the writings are much different. Most of the writings are from the pilots that have fought in combat and are passing lessons learned onto the next generation of pilots. There is less written about targeting at the operational level, and most of that did not begin until about 1988. The U.S. Air Force demonstrated during Desert Storm and Kosovo, that they desire to fight a parallel war, targeting tactical through strategic targets during the entire campaign. This thesis will attempt to

determine the applicability of different targeting strategies at the operational level for a time-critical decisive halt phase.

While looking at targeting strategies to see how a decisive halt can be accomplished, the element of time must be considered. It will most likely be a critical element in future engagements. In the modern age there has been a call for operations that can influence the enemy quickly. Both operations in Bosnia would have profited by stopping the enemy from doing what they were going to do before they started, or stopping them as soon as possible once it began. Due to this consideration, this paper will be looking at the targeting considerations during the planning and execution of a time-critical decisive halt. Answering this question is but the first step in defining the process for this specific application of airpower. The full answer would have to look at such topics as aircraft and personnel availability and capabilities, the political will and philosophy of the country, and the ongoing battle between the services over command and control and strategy. This paper is an attempt at a necessary first step to finding out if the Air Force can truly support the concept of a decisive halt. All of this brings the thesis to question, What is the optimal targeting strategy for a time-critical decisive halt phase?

Primary Question: What is the optimal targeting strategy for a time-critical decisive halt phase?

Secondary Question: What is the goal of a decisive halt in relation to developing a targeting strategy?

Tertiary Question: What is the proper definition of culminate?

Secondary Question: What different targeting strategies can be employed?

Tertiary Question: What overall theories do past theorists present?

Tertiary Question: What theories do present theorists present?

Secondary Question: What is the effectiveness of each of these strategies in a time-critical decisive halt phase?

Tertiary Question: What are the effects of each strategy?

Tertiary Question: How would each strategy work in a time-critical operation?

Limitations

1. This paper will discuss the theoretical aspects of choosing a targeting plan. This will enable every option to be looked at to its fullest extent without the handicap of political will. This will mean that the conclusions would have to be reviewed for political, moral, and ethical applicability before applying directly to a war fighting operation.

2. This paper will discuss airpower theories in how they relate to a decisive halt. Many of the airpower theories discuss the over all application of airpower and the abilities and capabilities it brings to the fight. This paper will stay focused on this new definition of a decisive halt.

Delimitations

1. This paper will not determine if a decisive halt can be accomplished at all. Before the Air Force can determine this, they must have looked at how they should target, if they will have the political will, and if they have the capability to do what is necessary.

2. This thesis will not determine if the United States will have the political will to plan or achieve a decisive halt.

3. This paper will also not determine if the Air Force has the technological capability to conduct a decisive halt, though it is the increase in technological capability that has made it necessary to look into how one can be accomplished.

Assumptions

1. The first assumption of this paper is that the U.S. Air Force definition of a decisive halt phase will be used. This is important for it keeps it in an airpower only application. This is in contrast to using all forces available to accomplish the task.

2. This paper assumes that a decisive halt is a viable concept. It is only looking at the applicability of different strategies to a decisive halt.

3. This paper is going to assume that weapons of mass destruction are not employed in the execution of a decisive halt.

Conclusion

This thesis is focused on what factors should be considered when planning a decisive halt in a time-critical environment. New USAF doctrine states that a decisive halt phase is one way the Air Force is going to try to influence future operations. Whether an air force can achieve such an effect may drive future funding, organizational changes, and command structures. Because of this, the questions of how a decisive halt should be conducted and how long it would take, becomes central to new doctrinal development. This thesis is designed to be the first step in that direction by asking, What the targeting considerations are when planning a time-critical decisive halt?

CHAPTER 2

LITERATURE REVIEW

> It is not necessary . . . for an Air Force, in order to defeat the enemy nation, to defeat its armed forces first.
>
> Lord Hugh Trenchard
> *The War Object of an Air Force*

This chapter is designed to show the applicability of different theorists to the primary thesis question. It is broken down into two sections: an overview of the theorists' philosophy and the applicability of different theories to the primary question. The overview of the theorists' philosophy is necessary to understand the underpinning of their views before attempting to apply them to the thesis question. The second part of the chapter will focus on identifying the parts of the theories that apply to the thesis question.

Primary Question

The primary question for the thesis is, What is the optimal targeting strategy for a time-critical decisive halt phase? The literature review will first examine the theories that apply to a subordinate question, What is the goal of a decisive halt in relation to developing a targeting strategy? This will lay the basis for the analysis, where a working definition of the goals of a decisive halt will have to be delineated. Following that, each of the major theoretical works will be looked at in relation to two subordinate questions; What parts of their theories apply to a decisive halt and what consideration do they give to the element of time? These questions will lead into analysis where the information will be used to evaluate different options the commander has when he is planning a decisive halt in a time-critical environment. This literature review will show the foundations for the analysis as it progresses.

Theorist Overview

In his book *The Command of the Air*, Giulio Douhet makes many comments about where airpower can and should be targeted. He discusses airpower in reference to the emergence of the airplane, well before the true strength of the weapon would be realized. Still, he has given many truisms that can be followed when it comes to targeting. He states, "Aerial offensives will be directed against such targets as peacetime industrial and commercial establishments; important buildings, private and public; transportation arteries and centers; and certain designated areas of civilian population as well" (Douhet 1983, 20). From this statement it is clear he believes airpower targeting will be at the strategic level, in an attempt to force the enemy to capitulate. He asks a simple question that shows his thinking on strategic bombing, "How could a country go on living and working under this constant threat, oppressed by the nightmare of imminent destruction and death?" (Douhet 1983, 22). This is his stance on strategic bombing.

General William "Billy" Mitchell's theories on airpower have had an affect on the growth of American airpower that is hard to measure. He advocated in his book *Winged Defense* that airpower was truly a revolution in military affairs by the stance he takes on how different airpower application is from land or naval assets. Though at times he sounds much like Douhet when he states that "an attack from an air force using explosive bombs and gas may cause the complete evacuation and cessation of industry in these places. This would deprive armies, air forces, and navies even, of their means of maintenance"(Mitchell 1999, 443). Mitchell strikes out from Douhet though in his lack of faith in pure strategic bombing. He maintained that a total reliance on offensive airpower, without the development or consideration of defensive assets such as pursuit

planes was flawed (Mitchell 1999, 419). While this approach did not spark the imagination of the public, it did build the foundation for later air force development. Mitchell's largest legacy may be his focus on the fact that airpower requires a new way of thinking and that the ascendancy of airpower is going to force the development of not only a new type of military thinking, but also a new type of military person.

Mitchell also asks the question of whether the air force should be the main force or just an appendage of some other service. This goes to the heart of the question if airpower can or should be used as an entity by itself. This follows Douhet's thoughts that airpower would become an independent service that would be the nations primary means to wage war.

Hugh Trenchard was the first chief of staff of Britain's Royal Air Force (RAF) and its commander from 1919 to 1930 (Meilinger 1995, 41). During his time in the RAF he developed a theory of strategic attack from the air that focused on breaking the will of the people by bombing industry. Much like Douhet, Trenchard's core belief was that the airplane was an offensive weapon and could best be used in that manner.

Jack Slessor was a protégés of Trenchard and wrote about airpower during World War II. He believed that the primary function of airpower was strategic bombing but due to the nature of the war going on in Europe, he also wrote about airpower in its role of supporting a ground force. He stressed the need for local air superiority and was one of the first to articulate that it was not a phase of the air campaign, but rather something that required persistence. He believed, unlike Douhet, that air superiority and bombardment would occur simultaneously and that this conduct of parallel operations was one of the keys to airpower application. He wrote that most countries had multiple centers of

gravity and that it was not necessary to destroy them to affect the enemy. He stated that during your attack you only needed affect the center of gravity to cause some effect upon the enemy (Meilenger 1995, 60-66).

Bernard Brodie has been called the "first scholar to analyze the real strategic and political significance of nuclear weapons in the aftermath of World War II" (Osgood cover). This exploration into the affects of nuclear weapons on modern war is applicable to any study on airpower, for one leg of the United States strategic triad has always been the ability to deliver nuclear weapons from a manned air platform. As a matter of history, it is only the airplane that has delivered a nuclear weapon in war. Brodie's book, *Strategy in the Missile Age*, ponders the development of pure military strategy, airpower strategy, and the affect nuclear weapons have on these strategies.

John A. Warden III retired from the United States Air Force in 1995 and before he did so he sparked arguments on how to apply airpower in the modern age. His theories were put forth first in a book titled *The Air Campaign* in 1986 while attending the National War College and he updated the same book in 1998 including lessons learned and other developments since the Gulf War. He has also written more papers expanding his theories (Warden 1998, ix-xi).

At the beginning of the Gulf War Colonel Warden was able to make an encompassing proposal, to General Normal Schwarzkopf, of a strategic and operational plan to win the conflict. This same plan was then briefed, at General Schwarzkopf's direction, to General Colin Powell, Chairman of the Joint Chiefs of Staff, the next day. Warden's theories and strategies can be seen in the conduct of Desert Storm and the lessons learned from the conflict that continue to be argued today.

The basis of all of Warden's theories is the thought that the enemy must be thought of as a system composed of numerous subsystems. By thinking of the enemy in these terms it is possible to obtain our objectives with the minimum of effort and the maximum chance of success. Warden states that the Air Force must always start with the objective they wish to achieve and then analyze the enemy starting from the center. He states, "At the center of this whole system and of every subsystem is a human being who gives direction and meaning. The ones who provide this direction are leaders, either of the whole country of some part of it." This center is the starting point for the model he developed to analyze the enemy, called the five-ring model (Warden 1995, 2-5).

Warden uses the five-ring model to show the organization of the enemy. The five rings, from outside in are; fielded forces, population, infrastructure, organic essentials, and leadership.

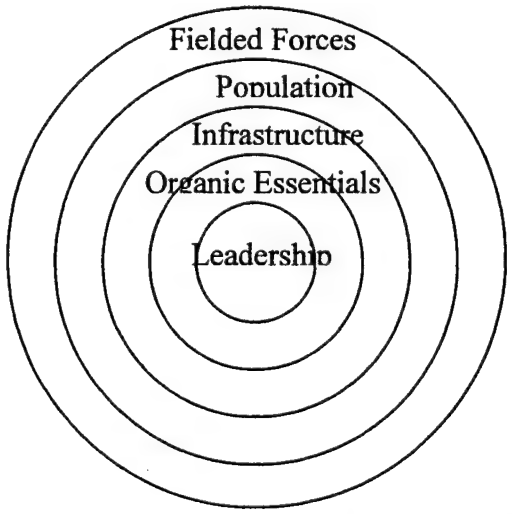

Figure1. Warden's five rings.

He states that everything from the human body to an enemy state to a drug cartel and an electric grid can be broken down into systems and subsystems using this model. The examples he gives in an enemy state are that the leadership is composed of the government, the organic essentials are energy (electricity, oil, food) and money, the infrastructure is roads, airfields and factories, the population is the people, and the fight mechanism is the military and police. Understanding Wardens five-ring model is critical to understanding the rest of his theory on how to apply military power onto the enemy as a system in order to achieve the objective. He states, "If we address the enemy system properly, its military forces will be left as a useless appendage" (Warden 1995, 9-13).

In his book *Bombing to Win,* Robert Pape departs from the traditional view of coercion via airpower. He maintains that rather than coercing an enemy by attacking their populous or the will of their population, the most effective way is to exploit their military vulnerabilities and to make it infeasible for them to continue (Pape 1996, 1). This strategy of coercion continues through out his entire book. Pape is very Clauswitizian in his assessment that a military action is only designed to bend a country to the will of another and believes the logical extension of this is that the main goal of any military operation is coercion. This is different than a deterrence operation when trying to maintain the status quo.

Thesis Question Application

Primary Question: What is the optimal targeting strategy for a time-critical decisive halt phase?

Secondary Question: What is the goal of a decisive halt in relation to developing a targeting strategy?

The foundation of the decisive halt phase is spelled out in Air Force Doctrine Document 1 (AFDD1), *Air Force Basic Doctrine*. The decisive halt phase is discussed under a category of Future Warfare and also how the U.S. Air Force fits into Joint Vision 2010, the U.S. guide to planning for future conflicts. AFDD1 discusses how war has traditionally been fought in three phases; halt the invading force, build up combat power and weaken the enemy, and mount a decisive counteroffensive. It shows that the enemy has been pushed past their culminating point at the beginning of the counteroffensive (AFDD1 1997, 41).

AFDD1 also gives a vision of the future with aerospace power being used to accomplish a decisive halt phase. It discusses the decisive halt phase as such:

> In this view of warfare, the halt phase may be planned as the conflict's decisive phase, not as a precursor necessarily to a build-up of ground forces. *The point of the "decisive halt" is to force the enemy beyond their culminating point through* the early and sustained overwhelming application of air and space power. As the "decisive halt" phase unfolds, continuing assessments will be ongoing. As the initiative and options of the aggressor decrease over time, US and allied options or "branches and sequels" increase. Security objectives may have been attained in the halt, follow-on diplomatic initiatives may conclude the conflict, or a build-up and counteroffensive may in fact be required. The global range, speed, and flexibility of air and space forces bring the "decisive halt" opportunity to reality. (AFDD1 1997, 42)

This definition gives us the foundation of the decisive halt phase.

Tertiary Question: What is the proper definition of culminate?

Culmination and the enemy's culminating point are discusses in Joint Publication 3-0, *Joint Operations*. It defines culmination in both a defensive and offensive action. When discussing this in terms of a decisive halt the objective may be either to stop the enemy from attacking, culminating an offensive operation, or to stop an enemy from starting on the offense, or culminating a defensive operation.

In discussing the culmination of an offensive operation JP3-0 says that culmination has occurred when an "attacker's combat power no longer exceeds that of the defender. Here the attacker greatly risks counterattack and defeat and continues the attack only at great peril" (JP 3-0 1995, III-22). When discussing the culmination of a defensive force JP 3-0 states that the defender has culminated when he "no longer has the capability to go on the counter-offensive or defend successfully" (JP3-0 1995, III-22). These two statements combine to form the agreed upon joint definition of culminate.

Because the theory of the decisive halt phase is new, there is reason to go back to the original definition of culminate. In *Webster's Ninth New Collegiate Dictionary* culminate is defined as, "to reach the highest point or climax; result." In this sense, it would be when the enemy force has reached its highest point and can go no further. In the joint definition it specifically talks about combat power ratios, but the Air Force might need a broader definition for looking at a decisive halt phase.

To know if a decisive halt phase is possible, the Air Force needs to look at how they will know the operation has been successful or when the enemy has culminated. This is a key question, for the answer as to when the enemy is culminated is going to determine not only if such an operation can be successful, but also if it will drive the targeting considerations.

Secondary Question: What different targeting strategies can be employed?

Tertiary Question: What overall theories do past theorists present?

Douhet discusses what to target when trying to stop an armed force. He does this in a series of questions as he asks, "what could an army do . . . its lines of communications cut, its supply depots burned or blown up, its arsenals and auxiliaries

destroyed" (Douhet 1983, 22). With this question he makes clear the concept of cutting off the logistics and supplies to stop the ground force from acting. This is further clarified when he talks about how to counter a naval threat in the question, "What could a navy do when it could no longer take refuge in its own ports, when its bases were burned or blown up, its arsenals and auxiliaries destroyed?" (Douhet 1983, 22). When Douhet talks of combating a military force with airpower, he thinks the best way to accomplish it is to attack what supports and sustains the combat operation.

Douhet also talks of one other aspect of airpower planning he feels is of the utmost importance, gaining command of the air, or in today's nomenclature to gain air superiority. He stresses air superiority and says that to achieve it, it is "necessary to deprive the enemy of all means of flying, by striking at him in the air, at his bases of operation, or at his production centers--in short, wherever those means are to be found." He describes targeting every part of the enemy's air system. He also stated that this can only be accomplished from the air over the enemy's country (Douhet 1983, 28).

Douhet gave much thought to where he wanted to target the enemy to ensure victory. He wanted to strike them strategically from the lines of communication to the population to defeat the capability and the will of the nation. He also wanted to target the military forces by destroying their supplies and bases cutting them off from any support. Lastly he reminded the Air Force that they must gain command of the air by targeting the enemy's ability to do the same by attacking across the spectrum from tactical to strategic.

Trenchard varies from Douhet's theories in the way he wishes to strike at the will of the people. With his view that the aircraft is an offensive weapon, he sees that the first action in a campaign a county must take is to keep an enemy out of the sky by attacking

his airfields. He saw the need for these attacks to ensure air superiority so his follow on operations could proceed unhindered (Meilenger 1995, 45). Trenchard's overall lessons can be summed up as: air superiority is an essential prerequisite, airpower is inherently an offensive weapon, and the psychological effects of airpower are greater than their destructive power (Meilenger 1995, 51). One of the past theorists can be looked at to give his opinion of using airpower alone for an operation. Slessor was writing about a world war, but the following statement gives his opinion on air only operations. "No attitude could be more vain or irritating in its effects than to claim the next great war--if and when it comes--will be decided in the air, and in the air alone" (Slessor 1936, 241). These lessons can be applied to generating the different strategies that are available to a planner for a decisive halt.

Bernard Brodie follows Douhet in his belief that the bombing of the populous and infrastructure will be enough to cause the war to end, though he states that this is only possible due to the emergence of the nuclear bomb.

Tertiary Question: What theories do present theorists present?

Warden takes his enemy as a system model and uses it to make conclusions on how to apply military force to make it bend to a stated objective. He states that "every state and every military organization will have a unique set of centers of gravity--or vulnerability" and tells us that the five-ring model is a good place to start looking for them (Warden 1995, 12). He starts his analysis at the center ring and works outward. This analysis will be very important in the analysis of both courses of action during a decisive halt and the applicability of it in a time-critical environment.

Warden states that the most critical ring is the leadership ring. This is composed of the enemy command structure (Warden 1995, 14). Whether this is a civilian government or a military leader it is the only element that can make concessions and make the decisions that are keeping an enemy on the course of action he wishes to change (Warden 1995, 14). He states that "capturing or killing the state's leader has frequently been decisive" (Warden 1995, 14) but cautions that in modern times it has become more difficult to do this. Contrary to this is the fact that the leaders in the center ring are more and more reliant on command communications and these are vulnerable to attack (Warden 1995, 14). All of the other rings, in Warden's model, are designed to apply pressure against the center ring, though through indirect means.

The second ring, organic essentials, he considers the next critical and is composed of facilities or possessions the state needs to maintain itself (Warden 1995, 15). Such industries as electric and petroleum production may be in this ring in a developed country and the products of these, whether produced in country or imported, are critical in influencing the second ring. Warden states that concession from the leadership may come because of three factors:

1. Damage to organic essentials leads to the collapse of the system

2. Damage to organic essentials makes it physically difficult or impossible to maintain a certain policy or to fight

3. Damage to organic essentials has internal political or economic repercussions that are too costly to bear (Warden 1995, 15).

Though this is the second most critical ring, Warden does caution that when striking systems in the second ring, such as the power system, that "the destruction . . . may have little short-term effect at the front--if there is a front" (Warden 1995, 15).

The third ring consists of infrastructure, and he considers this to be the third most critical. This is the states' transportation system, including anything that moves both civil and military goods and services throughout the area of operations (Warden 1995, 15). This ring also includes most of the states industry that are not in the organic essentials, or the second ring. Warden states that if the state's ability to move goods, services and information from one point to another is taken away, the whole structure of the country changes, and it has much less capability to resist the demands of an enemy (Warden 1995, 15). Because this ring is a larger than the second, it will take a larger effort and more time to cause this effect.

The fourth ring is the population. Warden states that there are two major problems with trying to target and affect this ring of the enemy system. The first is that there are just too many targets. The second is that the population will more than likely be willing to "suffer grievously before it will turn on its own government" (Warden 1995, 16). Warden also warns that trying to predict the outcome of attacking the fourth ring is very difficult due to the unpredictability of humans. His overall conclusions on the fourth ring are that "as part of an overall effort to alter the enemy system, an indirect approach to the population is probably worthwhile; one should not, however, count on it" (Warden 1995, 16).

The last ring in Warden's model is the fielded forces of the state. Warden splits from many military theorists in the analysis of this ring. Warden states that the military

is only a means to an end, that they protect the inner rings from attack and that a reduction in capability of the outer ring will force concessions only because the leadership will know their inner rings are open for attack (Warden 1995, 17). John Warden's model and theories give us a good basis for further thought into analyzing and then attacking the enemy as a system. According to him, "all actions are aimed against the mind of an enemy command or against the enemy system as a whole" (Warden 1995, 17), and that the Air Force must measure any of their actions against the affects it will produce on the entire system.

Pape states that historically there are four main theories about coercion from the air. These theories include measuring the balance of resolve between two countries, looking at the balance of interests, the vulnerability of the populous to air attack, and finally the balance of forces (Pape 1996, 4-5). His contention is that any one of these theories is too shallow to understand the act of coercion from the air. He uses historical examples to show that none of these single-factor theories can explain why some campaigns worked and others failed. He considers all of these theories to be incomplete.

Pape argues that there are really two distinct branches of options when trying to coerce from the air. The first is a threat to civilians, which he labels as a punishment strategy. The second is the threat of military failure, which he labels as a denial strategy (Pape 1996, 6). He states that most theories have only looked at the punishment part of the coercion where the population is made to suffer until they lose moral or the leader changes his course of action. He states that a denial campaign has the element of damage to the country but also includes the country losing the capability at the same time (Pape 1996, 7).

Secondary Question: What is the effectiveness of each of these strategies in a time-critical decisive halt phase?

Tertiary Question: What are the effects of each strategy?

Pape's analysis is that the evidence of past campaigns shows that it is the threat of military failure and not the threatening of civilians that has been successful in military coercion (Pape 1996, 10).

> If we find that coercive strategies based on denial are more effective than those based on punishment, then, by implication, the most effective way to compel concessions without achieving decisive victory is to demonstrate that one actually has the capacity to achieve decisive victory. Further, the overlap between coercion and military victory makes it possible to rate the magnitude of coercive successes. Surrender long before complete military defeat should be regarded an outstanding coercive success. By contrast, surrender only shortly before defeat should be considered only a minor success. This standard is important. If we find that coercion by denial does work but produces only minor successes, we must conclude that it is not worth pursuing in cases where coercers are not willing to fight almost all the way to victory. (Pape 1996, 15)

It is Pape's belief that coercive success will be achieved by increasing costs of continued resistance, raising the certainty that these costs will be suffered, lowering the benefits, or reducing the probability of success with the caveat that benefits are normally not changeably by those doing the coercing (Pape 1996, 16). He states that punishment strategies attempt to raise the cost of resisting while denial strategies try to reduce the probability that resistance will yield benefits.

He also states that no one coercive strategy is likely to succeed under all circumstances. He does remind the reader that there are conditions where one strategy is more likely to succeed than another. Leading to the conclusion that the Air Force must understand the roots of thinking about each strategy to know which to apply in a given situation.

Pape wrote, "coercive success almost always takes longer than the logic of either punishment or denial alone would suggest" (Pape 1996, 20). He goes on to say that this is because the targets of coercion are normally slow to realize the magnitude of the increased suffering and the declining military ability to resist. This is a critical thought when planning a coercive campaign in a time-critical environment. This thought is specially pointed at the population as a whole and here Pape tells us that conventional punishment rarely succeeds. This does not discuss whether the results would be the same if one is trying to coerce a faction or a single leader.

Pape does discuss why it can take a long time to coerce a leader or faction. He states "governments tend to hold out longer than the society wants because there are domestic costs to admitting defeat" (Pape 1996, 32). He goes on to state that any concession the government makes may lead to the fall of the government either though political rivals using the failure as a political tool, or being removed as a condition to the victory. These facts will make it tough for a coercive strategy to work quickly either against the population as a whole or against the leader of the country or the faction that supports him.

According to Pape, one of the reasons a coercive strategy will take more time than expected is that during wartime the population has an increased willingness to tolerate costs (Pape 1996, 22). He also states that forcible removal of a regime by popular opposition groups is unlikely as long as military forces are loyal to the government. This would also lead to a conclusion that any coercion campaign intending this as the outcome would take a very long time indeed, if it were to succeed at all.

Pape does state that the decapitation campaign proposed by Warden, where the target sets would include leadership and communications would take very little time, due to the limited number of target sets (Pape 1996, 56).

Tertiary Question: How would each strategy work in a time-critical operation?

Time is not an element spoken of often by Air Power theorist. Douhet discusses that the fight for Air Superiority must take place quickly. This is due to his idea that there will never be an adequate defense against airpower (Douhet 1983, 9). None of the theorists examine how to accomplish an air campaign in a limited amount of time.

Summary

This literature review shows that there are a variety of theories on how to apply airpower. Airpower theory has evolved from Douhet's call for strategic bombing to Wardens operational level application against an enemy system. Many of these theories have direct application in analyzing the possibility of a time-critical decisive halt. The remainder of this thesis will analyzed the theories to develop targeting strategies and then analyze each of these for its advantages and disadvantages.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

This chapter examines the research methods that will be used in chapter four to translate research into conclusions. This thesis is designed to determine the theoretical question of, What considerations should be taken into account if the joint force commander is planning a decisive halt in a time-critical environment? The thesis takes only the theoretical view, limiting itself to airpower theory and not exploring the political, moral or ethical repercussion such a strategy would have. The conclusions reached are only part of a larger question on how to plan and conduct a decisive halt phase with today's weapons and targeting capabilities.

Primary Question

The primary question will be answered by an evaluation of the different options available to a commander. The determination of the strategic and operational methodology will influence the targeting process and is the critical first step in prosecuting the entire campaign.

Primary Question: What is the optimal targeting strategy for a time-critical decisive halt phase?

Secondary Question: What is the goal of a decisive halt in relation to developing a targeting strategy?

Tertiary Question: What is the proper definition of culminate?

Secondary Question: What different targeting strategies can be employed?

Tertiary Question: What overall theories do past theorists present?

Tertiary Question: What theories do present theorists present?

Secondary Question: What is the effectiveness of each of these strategies in a time-critical decisive halt phase?

Tertiary Question: What are the effects of each strategy?

Tertiary Question: How would each strategy work in a time-critical operation?

Research

Research for the thesis is divided into two distinct parts. The first part is a review of past airpower theories. This review built a foundation of past airpower thinking and searched them for any specific thoughts that applied to the thesis question. Each past philosophy is examined to see if their ideas apply to a decisive halt, and then if so, it is further examined to see if they consider the element of time.

The second part of the research examines modern airpower theories for those applicable to a decisive halt. The reason the research is divided into two sections is the concept of a decisive halt phase is relatively new. Unlike modern theorists, those that looked at airpower in past times could not understand how precision weapons and the increased intelligence capability would affect modern airpower application. The modern theorist can use these new capabilities to examine more specific means of attacking the enemy and planning a decisive halt phase. These theories are examined for applicability to a decisive halt phase and then again, like past theories, to see if they take time into account.

The last part of the research consists of understanding what current United States Air Force Doctrine means when it proposes a definition and discusses a decisive halt. This discussion is located in a section titled "a new view of conflict" in Air Force

Doctrine Document 1 (AFDD1 1997, 42). Current Air Force Doctrine was researched and The United States Air Force Doctrine Center was contacted to ensure current doctrine was being used in this thesis in regards to a decisive halt phase. The combination of examining airpower theories and reaffirming the current trends in Air Force doctrinal development allows for the start of analysis.

Analysis

The analysis for this thesis occurs in a four-step process. First, further define a decisive halt beyond the current Air Force doctrinal definition, and second, examine the researched airpower theories to develop a tree of options a commander could use when picking a method to employ during a decisive halt. Third, analyze each of these options using all available theories to see how effective they would be in a time-constrained environment followed by the fourth and final step, bringing all of this analysis together in a format readable and usable by a commander or his staff.

Definition Determination

Air Force doctrine states that a decisive halt is the decisive phase of a campaign and is not a prelude to a ground or naval phase (AFDD1 1997, 42). This view of an air campaign is new and is only expanded upon in that it is supposed to culminate the enemy during this phase. The guidance to the commander is that he should accomplish this by using an overwhelming force from the air (AFDD1 1997, 43). There is little written outside of these phrases that further define the objectives and methods of a decisive halt phase.

The first part of my analysis is to examine the Air Force's definition of a decisive halt and determine the true objectives for this phase. The crux of the definition is the

word, culminate, and therefore the analysis is focused on this portion of the definition. The goal of this portion of the analytical phase is to develop a working definition in order to determine options the commander can take in achieving a decisive halt.

Tree of Options

The second step in the analytical process is the determination of options the commander has to prosecute an air campaign in order to accomplish a decisive halt. The foundation of this portion is a combination of the definition developed during part one and the airpower theories researched in chapter 2. By looking at the airpower theories currently available, it is possible to extrapolate different theoretical ways to execute an air campaign. These options can then be grouped by type until an overall structure is determined. The goal of the second part of the analytical process is to put all of these options, as laid out by the theorists into a structured tree of options for the commander. This tree of options will provide the basis for examining each of these options for their applicability towards executing a decisive halt in a time-critical environment.

Option Applicability

The third portion of the analysis is to determine the theoretical usefulness of each option. The method of doing this is to take each of the options and using the past and present airpower theories, to determine what the effects of each option would be. Then each option will be looked at for the time each could be expected to take. The format for this portion will consist of three steps starting with defining the option. Competing theorists have used different words to express similar thoughts or opinions and so it is imperative to define each option before going forward. Once a definition is determined for each option, the second step is to look at all of the theories that apply to this option

and look for common thoughts and differing opinions. This step is designed to get an overall view of how effective the option may be.

The final step in the process is to come to a determination of that option's usefulness to the commander if he is tasked with a decisive halt in a time-critical environment. This is accomplished by using all of the past and present theories to extrapolate a consensus. This will be relatively easy where the theorists agree and will be more difficult where they do not. The end product of this third analysis phase is a list as shown below:

1. Option title
2. Definition
3. Summary of past and present theories
4. Applicability to a time-critical decisive halt

This listing for each of the options allows for the building of a matrix to compare all of the options, which is the last phase of the analysis.

Matrix

The final step in the analysis process is the generation of a matrix. The goal of the matrix is to organize the analysis of the options in such a way that they can be compared with one another in order to reach a conclusion in chapter 5. The matrix will list the advantages and disadvantages of each option for easy comparison using the data derived during option applicability. This matrix is the end product of the analysis phase.

Summary

This chapter discussed the method used in this thesis to determine the applicability of different options for executing a time-critical decisive halt. It explained

that the first step is determining a working definition that expands on the one found in current United States Air Force doctrine. Following the derivation of the definition the second phase is the use of past and present theories to determine a tree of options that are available to prosecute a decisive halt. The third step takes each of these options and determines a definition for it, looks at it in the light of past and present theories and determines its effectiveness during a time-critical decisive halt. The last step is combining all of these determinations into a matrix from which conclusions can be drawn. This step-by-step analysis provides the tool needed to get the beginning of an overall picture of the targeting considerations for a time-critical decisive halt.

CHAPTER 4

ANALYSIS

> The influence of air power on the ability of one nation to impress its will on another in an armed contest will be decisive
>
> William "Billy" Mitchell
> *Winged Defense*

Introduction

This chapter is designed to accomplish all of the analysis necessary to reach a conclusion in chapter five in regards to the primary question, What is the optimal targeting strategy for a time-critical decisive halt phase? The chapter is broken down into sections related to the secondary and tertiary questions below:

Secondary Question: What is the goal of a decisive halt in relation to developing a targeting strategy?

Tertiary Question: What is the proper definition of culminate?

Secondary Question: What different targeting strategies can be employed?

Tertiary Question: What overall theories do past theorists present?

Tertiary Question: What theories do present theorists present?

Secondary Question: What is the effectiveness of each of these strategies in a time-critical decisive halt phase?

Tertiary Question: What are the effects of each strategy?

Tertiary Question: How would each strategy work in a time-critical operation?

Goal of a Decisive Halt

To begin the analysis of targeting considerations during a time-critical decisive halt, an analysis must first be made of what a decisive halt is trying to accomplish. The

Unites States Air Force defines a decisive halt as "a halt phase that is the conflict's decisive phase, not as a precursor necessarily to a build-up of ground forces" (AFDD1 1997, 19). They then further clarify what it is suppose to accomplish by stating, "a decisive halt is designed to force the enemy beyond their culminating point through the early, sustained, and overwhelming application of aerospace power." This definition is clear in the weapons that are going to be utilized, aerospace weapons to apply aerospace power, but does not go any further in defining how to push the enemy past that culminating point, or how they will identify when it will happen. A deduction must be made as to the intent of the airpower planners before they can examine possible methods of aerospace power application that might be used in a time-critical decisive halt.

The concept of a decisive halt comes from U.S. Air Force doctrine and therefore it is logical to assume that the definition of culminate would come from Joint Doctrine. The definition found there is split based upon whether the force is in the offense or the defense. It defines culminate as follows:

> Culmination has both offensive and defensive application. In the offense, the culminating point is the point in time and space at which an attacker's combat power no longer exceeds that of the defender. Here the attacker greatly risks counterattack and defeat and continues the attack only at great peril. Success in the attack at all levels is to secure the objective before reaching culmination. A defender reaches culmination when the defending force no longer has the capability to go on the counter-offensive or defend successfully. Success in the defense is to draw the attacker to culmination, then strike when the attacker has exhausted available resources and is ill disposed to defend successfully. (The Joint Doctrine Encyclopedia, 220)

This definition seems to be land-centric focused in that it talks completely about combat power and the ability to gain or keep a geographic objective. Airpower can be used to coerce an enemy in different methods than just decreasing the enemy's combat

power. The U.S. Army does not define culminate, but it does define culminating point in FM 100-5-1, Operational Terms and Graphics, as "The point in time and space when the attacker can no longer accomplish his purpose. This can be due to factors such as combat power remaining, logistics support, weather, moral, and fatigue" (FM100-5-1, 1-43). This definition lists combat power as one of the factors as to when a force has reached their culminating point.

From the definition of decisive halt, with its goal for the phase to be the decisive phase of the conflict and not a precursor to a ground action, an assumption can be made. This assumption is that the air component may be trying to accomplish more than just the destruction of combat power. Instead the air component is attempting to stop the opposing force from executing their campaign plan. Due to this limitation in the definition in joint doctrine, it is necessary to redefine culminate as it refers to a decisive halt phase. In this case the author proposes the definition: When the enemy cannot achieve his objective or continue his desired course of action due to coercion or the destruction of his physical capability.

This definition fulfills everything that a decisive halt phase is intended to do. It stops the enemy from doing what he wanted to do as the decisive part of the operation and does it by any means of applying combat power. If a decisive halt phase is restricted to decreasing the enemy's combat power, then the total ability of airpower is being hamstrung. One of the great assets of airpower is it flexibility which allows it to strike at a multitude of different types of targets in a multitude of ways. This definition of culminate allows airpower to be applied flexibly in the prosecution of a decisive halt phase.

Targeting Strategies

With this definition of what a decisive halt is designed to do, it is now possible to look for possible ways to carry it out. Once these options have been enumerated they can review each to see if they are feasible in a time-constrained environment. This will lead to an overall view on what considerations a commander should understand when faced with planning a decisive halt phase in a time-critical environment. The options that are presented are a combination and synthesis of many past and present theories and attempts to combine them into a single tree of options.

The first step in the development of the tree was the rationalization that there is a different between coercion and physical effects. Coercion is applied against an individual or group of people. Physical effects are directed at people and objects by such tasks as destruction or neutralization. These two types of effects form the basis for one major branch in the tree of options between those strategies that attempt to coerce and those that are relying on denial by force. In the coercion branch, targeting will be focused on the best possible way to coerce an individual or group of individuals and the denial branch will seek to win by engaging targets in order to deny the use of an asset. Pape breaks this thought out in his book as he separates two types of what he calls coercions, that by punishment and that by denial. In the punishment branch he is talking about killing people, be they military or civilian, and in the denial he is talking about destroying military means to accomplish the action (Pape 1996, 13). The two branches generate different targeting priorities and strategies.

When looking at the coercion side of the tree, there are basically three people or groups of people to coerce. They are the leader, the faction that holds the leader in

power, and the populous. Warden alludes to this in that the only place that he has people in his five rings is the center and fourth rings, leadership and population respectively. In the center ring he groups the leader and his party as one leadership cell and in the fourth ring he has the rest of the population. Older theoreticians such as Douhet focus on bombing population centers for at the time they did not have either the military intelligence capability or the physical ability to attack the other two elements effectively. This leads to the first part of the tree of options, when the Air Force attempts to coerce:

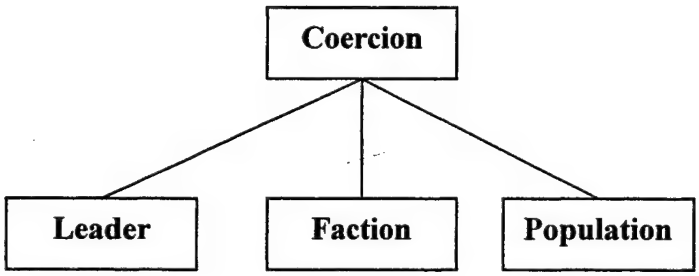

Figure 2. Coercion tree.

The other part of our tree is when attempts are made to stop an enemy from their course of action by denial of capability. One way this can be accomplished is by denying them the people or material with which they are going to accomplish the action. A second way is by denying them the infrastructure to support an operation. The last option is to deny them the leadership that gave the order for the operation, either political or military. Any of these options will produce a condition where the course of action can no longer be executed. These two lead to the other half of the tree, which is:

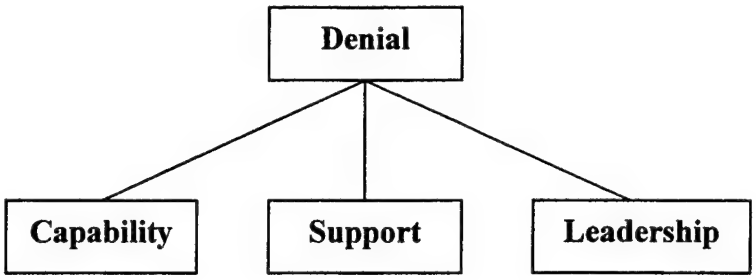

Figure 3. Denial Tree.

The combination of these two sides leads to a completed tree of options that looks like this:

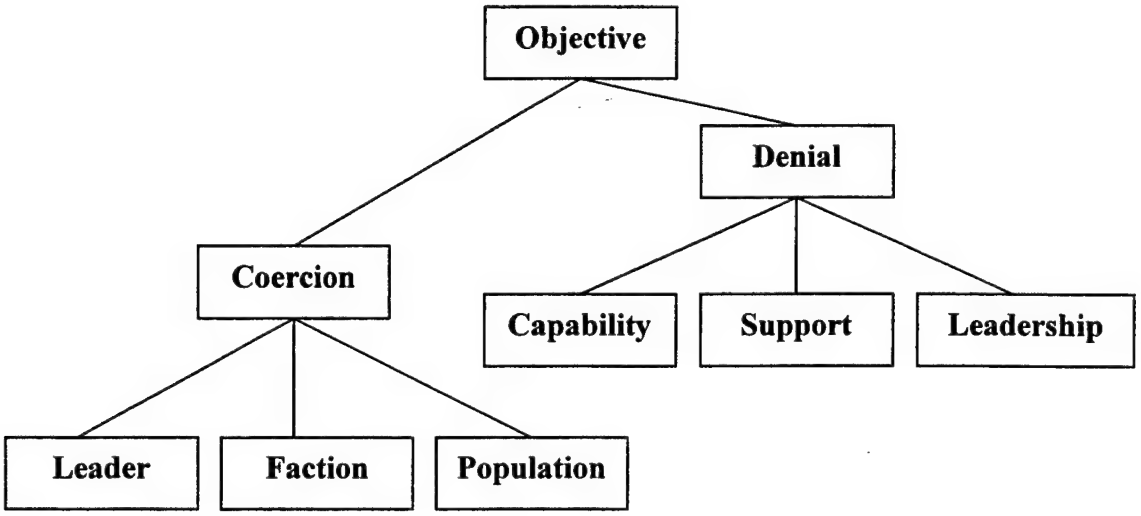

Figure 4. Tree of options.

Each of these options represents a unique way to attack the enemy system and attempt to conduct a decisive halt. The next step is to define each of these options and evaluate them in regards to a decisive halt and time.

Strategy Effectiveness

The first side of the tree this paper will evaluate will be the coercive side. Again, this side is designed to influence people to decide to change their course of action. This may be done by convincing them that the cost of the operation is not worth the pain that will be inflicted. This strategy implies a targeting strategy that affects items that are vital or important to the person or group being coerced.

Coercion of the Leader

Definition

The first option is to attempt to convince the leader to stop the operation. This does not mean the elimination of the leader, but rather forcing him through a coercive strategy to change his orders.

Summary of Past and Present Theories

This option is the epitome of Warden's rings in that it is focused directly on the inner ring and therefore should be one of the most efficient uses of airpower. This reasoning would lead to a belief that this direct coercion of the leader would be one of the most effective ways to force a decisive halt in that it is only required to convince one person, but further analysis is needed. Warden does focus on the decapitation of the enemy system more than he does on the coercion of the enemy leader.

Pape holds a very different view of the ability to coerce the leader using airpower alone. He states in *Bombing to Win* that "incentives to resist are weaker when regime change involves replacing individuals rather than the destruction of the ruling class and allied social institutions" (Pape 1996, 32). The reason he believes this is that there are

traits of a leader and properties of being in a leadership position that make that person less susceptible to coercion.

Applicability to a Time-Critical Decisive Halt

The first part of the analysis is to evaluate what things would directly coerce the enemy leader. There are a couple of factors that will make this one of the easiest and most effective strategies. The first is the fact the intelligence focus is very small for it only has to look at those items that will affect the leader directly. These targets could consist of himself, his friends, family, supporters, or his money base. Intelligence needs only to look for the primary things important to the leader. This is not to say that a military force may not develop as a target in this campaign. An example would be if a leader has a unit that is particularly loyal or important to him, in this case the targeting and subsequent destruction of this asset might influence the leader directly. This target set might be developed and combat power allied relatively quickly helping with an operation that is time-critical.

There are several factors that make this strategy tough and cause it to last longer than the original analysis would suggest. The first is that the leader would be one of the last people to feel the effects of any type of denial campaign. This is due to the good probability that in most countries basic necessities such as water, electricity, food will be available to the leader well after it has been denied to the rest of the population. Second, is that in many cases the leader will have fought to gain the power he now has and will therefore not wish to relinquish it. Changing his mind without the rest of the country following and agreeing is a sure way to force a change in leadership. Even if extreme pressure is applied to the leader he may be unwilling to be coerced due to his fear of

losing the power that he has. He may use these coercive attempts to set himself up as a martyr and use these attacks to excite the country behind him, further entrenching him in power and making him less vulnerable for coercion.

Some argument could be made that the final goal is always to coerce the enemy's leadership no matter what targeting strategy you choose. I would counter this argument on two ways. When using a denial strategy the goal is to give the enemy leadership no choice. If you deny the leader something, then it does not matter what decisions he is making and you do not need to coerce him. The second counter to the argument that you are always coercing the leader is if the strategy is designed to remove a leader from power. In this case you are coercing the faction or population that is going to remove the leader and it does not mater if you coerced the leader. The analysis for coercing the leader only deals with directly affecting the leader

The problems with identifying and executing these coercive strategies against the leader and the factors that help the leader to overcome this coercion are going to make this type of operation very difficult. The fact that the leader is entrenched in power and the initial coercive attempt may bring him to martyrdom and pull the people behind him with greater popular support will increase the time necessary for the operation.

Coercion of the Faction

Definition

This option is to apply coercion against some segment of the population or government that would force a change in the policies of the enemy. This includes such groups as the political elite of a country that could influence a leader, the military leadership of a country if they are what support the current power system, or any group

that might be incited into rising up and replacing or strongly influencing the policies of the country.

Summary of Past And Present Theories

Warden puts all leadership into his center ring. To him this was the most efficient use of airpower. His strategy strives to target the inner ring if it is possible because it will take the shortest route to the center of gravity. He does state that to attack the center circle, the other four rings may need to be attacked in an effort to affect the leadership through other ways. The method of attacking the organic essentials or infrastructure is the method to influencing the leadership, or in this case the faction.

As discussed in the coercion of the leader option, Pape believes that it is going to be easier to coerce a faction than a leader. He states, "when sacrificing the current individual leaders is the only real domestic cost to concessions, even their strongest social and political allies may withdraw their support" (Pape 1996, 34). The faction behind the leader, such as a ruling class, political supporters, or the military commanders, is traditionally not in the public's eye as much as the leader. Due to this factor, the faction may not have the same worries about the appearance of a change of policy or making concessions.

Applicability to a Time-Critical Decisive Halt

There are some advantages to this strategy when it comes to a time-critical decisive halt. The first advantage is, like trying to coerce a leader, it is a small target set. Once the group is identified the effort is focused on the appropriate targets that would influence the group to change the course of action. When the faction is of the same group as the leader it is possible to hit targets vital to both. The advantage in this case is that

the faction will probably change their minds because the public does not see them as responsible for the policies of the country individually. A good example is how easy it would be to coerce Congress verses the President. When attempting to force the president to change his mind, one of the factors will be his knowledge of public opinion. He will be aware that he is the spokesman for the country and if he is viewed as weak due to this concession they public might well remember and blame him. If one representative's vote changes in the congress, the public is normally not aware of the change and therefore will not blame the individual congressman.

There is a case where this faction is composed of military leaders. In this case the targeting may be the destruction, or threat of destruction of the units necessary for the operation or specifically loyal to some commanders. This targeting, though attacking military units, is different than trying to deny the enemy the capability to attack. The difference is that it is not actually necessary to take away the capability but rather inflict damage to the units in order to coerce the commander. An example would be the defeat of the integrated air defense of a country. In this case, the population would not feel any pressure, the leader would only feel slight pressure from those attacks, but a military commander who understands that his forces, and therefore his power base, are now open to attack might attempt to change the operation or influence the political leadership. This option totally depends upon the power the military has in the government.

Coercion of the Population

Definition

This strategy is defined, as the application of air power to attempt to force the enemy population to take such an action as would end the conflict. Attempts to execute

this strategy could include such actions could be denying vital food and water supplies or disabling the nations economy in order to excite revolution to overthrow the current leadership or simply make the people give up. This strategy is one of the first and most often voiced strategies for airpower. Douhet, for example, advocated the use of bombing civilian populations to break down a country and force them to surrender.

Summary of Past And Present Theories

Douhet stated the way to attack a country is to bomb the cities into submission, forcing the population to cease wanting to continue the war. He stated that a combination of conventional, incendiary, and gas bombs would be able to instill so much fear that the population would have to give up. Douhet believed in airpower's ability to coerce the population. This carried forward with Trenchard whose strategy also was designed to influence the population by bombing the industrial areas of the cities.

Between Douhet and Trenchard and the present theorists came a new weapon that forced a changing of philosophy about coercing the population; a nuclear weapon. Brodie writes in his book about the weapon's ability to influence a population, not only by its use, but also by the threat of its use. It can be seen as the weapon that validates Douhet's theory. Such massive devastation as would occur in a nuclear exchange could possibly stop the belligerents from fighting because of a fear for their very existence. This thesis is not considering the nuclear option, or any other weapons of mass destruction, for it changes the nature of a conflict, and therefore will not be considered as an applicable option for a decisive halt.

Two of the modern theorists think that coercion of the population is not a good option when trying to use airpower. Warden has the population as his fourth ring,

meaning that it is not an efficient use of airpower. He states that it would be very hard to apply enough force to this ring to cause a significant effect. Pape agrees with Warden in this situation. He explains his rational by stating that a population is a large entity to influence in that they tend to bond together during times of crisis. This bonding makes them harder to coerce. Another factor he states is that the population rarely understands the full effect the bombing is having on them. Even with the shutting off of electricity, water or sewage, the effects take a while to influence the psyche of the population (Pape 1996, 21).

Applicability to a Time-Critical Decisive Halt

Coercion of the population has long been a favorite of airpower theorists, and the technique of breaking the will of the people by applying airpower is still discussed. Its applicability to a time-critical decisive halt is questionable. The reasons for this are threefold. The first is the large size of the entity the coercion is being attempted on. The second reason is the inherent resistance a population has to being coerced, and the third is the factor of time. These three combine to make this option not optimal when it comes to planning a time-critical decisive halt.

The population of almost any country in conflict will be a large group of people. This factor makes coercion of it in a time-critical manner difficult if not impossible. To be successful in such a campaign, the attacking force would have to attack targets that would affect a large enough percentage of the population to be viable. This will lead to a very large target set over a large area to bring suffering to the population as a whole. The large number of people that need to be coerced is a detriment to doing it in a speedy manner and takes away from this options applicability.

The ineffectiveness of this strategy is compounded when the inherent property of a population to resist coercion is considered. "Nationalism . . . imbues individual citizens with personal attachment to national goals, for which they are often willing to accept great sacrifice" (Pape 1996, 21). This nationalism may actually increase as pressure is applied to the population and therefore the population's ability to resist coercion will increase with the attempt to coerce. The size of the population coupled with this resistance to coercion would make this strategy difficult but becomes even more so when the time-critical aspect of the operation is considered.

The last item that makes coercion of a population difficult is how long it will take a population to perceive the damage that is being done. Much damage may be done to the infrastructure and facilities of a country, but the individual person is only aware of what affects them personally (Pape 1996, 23). An example would be cutting the oil supply by 50 percent. In this case, if there is still enough gas to fill up a person's car, they will not feel the effect of what has been destroyed. Because of this, it may take a long time for the effects to filter their way down to enough people to affect the population as a whole. When the effect of a large population is combined with the inherent ability of a population to resist coercion, this option does not seem likely to be effective in a time-critical decisive halt.

Denial of Military Capability

Definition

Denial of military capability means taking away the ability of the country to do what they want to achieve. Options for accomplishing this could include denying them a

particular asset that is needed for the attack or a reduction in combat forces such that they can no longer successfully prosecute the operation.

Summary of Past And Present Theories

Past theorists such as Douhet, Trenchard and Slessor saw the benefit of airpower as its ability to bypass the enemy's military forces and strike at the population or the industrial complex. They saw this ability as what enabled airpower to be used differently than ground or sea based military might and defined their strategies on how not to attack the enemies fielded forces. From this the Air Force can interpret that they did not see this as a good use of airpower, the denial of military capability.

Warden states that the least efficient use of airpower it to attack the fielded forces of an enemy. These forces make up his outer, fifth, ring and he sees them as the last resort when planning a strategy against an enemy system. He states that great ability of airpower is its ability to strike into the inner circles and bypass the traditional way of striking, or executing a denial strategy against his outside ring. Warden really emphasizes that hitting the fielded forces takes away from airpower's strength.

Contrary to Warden's belief that attacking the fielded forces will be the least efficient and effective means of employing airpower, Pape states that "in conventional disputes, coercions is most likely to succeed when directed at military, not civilian vulnerabilities" (Pape 1996, 19). He does caveat this by saying that there is no strategy that is likely to succeed in every circumstance (Pape 1996, 19).

Applicability to a Time-Critical Decisive Halt

The applicability of this option will depend upon the ability to identify the critical military capability that will culminate the opposing force. One of the factors in using a

denial of military capability strategy is that the military targets are more likely defended better than civilian and infrastructure targets. The enemy may have identified his military hardware as important and he would therefore have them guarded against attack.

If a military unit is the target then the denial of military capability may take the form of coercing the soldiers to give up rather than by destruction. There are two factors that increase the difficulty in doing this. The first is the military members are trained and expected to take casualties in their units and the second is that so long as they still retain the capability to fight back with any chance of success, their will is very hard to break. In a time-critical decisive halt, there probably will not be time to make the individuals give up their will to fight so this will in most likelihood not be a good option.

Pape believes that denial of military capability is the best way to go about stopping the enemy. He bases this on the fact that it is a recognizable target that will have effects on their ability to continue the campaign.

Denial of Infrastructure

Definition

The theory behind this strategy is to deny the enemy the ability to bring military might to bear by denying him the support his forces must have to operate. This would be done by hitting key industrial areas or interdicting material necessary to the military forces.

Summary of Past And Present Theories

Most of the past theorists included denial of infrastructure when they wrote about an air campaign. In Command of the Air, Douhet lists transportation arteries and centers, as one of the four categories of targets that an air campaign should strike against (Douhet

1983, 20). He discusses that a nations ability to strike the enemy's forces and supply lines where ever they choose will be the greatest source of offensive power. Trenchard, who believed that the real key to strategic bombardment was the selection of targets, listed such infrastructure targets as roads, rail lines, and telephone exchanges in his targeting plan.

The overall title of infrastructure encompasses two of Wardens rings, organic essentials and infrastructure. Warden states that striking at the organic essentials in the second ring can cause such a reduction in support to the fielded forces that they would be a useless appendage (Warden 1995, 9-13).

Applicability to a Time-Critical Decisive Halt

An advantage to this strategy is that the nodal analysis may be easier. A country's industry and infrastructure network is probably more static and able to be analyzed than some of the other strategic targets. Targets from electric grids to factories will remain in static locations, and the infrastructure that supports them can more readily be identified.

There are also some disadvantages, such as the time it will take for the effects to be felt, the size of the target set, and the ability to shift production or transportation to other areas or routes. A military force normally has stockpiles of munitions, fuel, water, and food. The military force would not feel the initial effects from this strategy until those stockpiles were depleted. This is in addition to the factor that to cause a serious degradation of the enemy's military capability the target set would have to be extensive, thus again delaying the ability to quickly influence the military capability to execute the operation. The last disadvantage to this strategy is the number of alternate routes and

production facilities that are available to pick up the load when hitting industries or lines of supply.

Overall this strategy has some advantages to it, though its applicability in a time-critical situation is suspect. This is mainly due to the time it takes for the effects to be felt. Warden's concept of the military forces withering on the vine may well occur, but the question is, How long it is going to take before a significant reduction in combat capability will be felt?

Denial of Leadership

Definition

This strategy targets the leadership of the country for removal. This would be done by either eliminating the country's leader or leadership.

Summary of Past And Present Theories

Past theorists did not ponder this capability, for the accuracy and intelligence, except for very few unique circumstances, did not allow for this option. On the other hand, leadership is the center ring of Warden's circles. He views attacking into that ring as the most efficient use of airpower. In this case, instead of targeting to coerce the leadership the goal is to eliminate the center circle.

Applicability to a Time-Critical Decisive Halt

There are distinct advantages to this strategy along with some definite disadvantages, so if this strategy is to be considered these should be considered carefully. The advantages of this strategy are that it is a small target set, and the reaction to the action would occur in a short amount of time. In a dictatorship setting, this may be limited to one person or a very small group that holds the true power in the country. This

is an advantage when trying to do a time-critical decisive halt. The other advantage is that the effects would be felt almost immediately. Whatever reaction the strikes will have will be felt in a small space of time due to the central nature of the target. The key to this strategy is to make sure that result is the desired result.

The disadvantage of this strategy is the difficulty in finding and striking the target, the possibility the action may not produce the desired results, and the repercussions of an unsuccessful strike. The leader of a country is most likely going to be well protected. He may use deception to disguise his location, making the collection of intelligence difficult. If he is in a hardened facility it will take a specific weapon to penetrate and have an effect. These factors will make finding and striking the target difficult. Another problem with this strategy is the possibility of very serious negative results if a strike should fail. It is likely that the leader will use this failed strike to rally the country, making the leader stronger more able to resist any further actions. The leader will also be aware that this strategy has been selected and will therefore be more difficult to locate and attack the leader again.

The last major problem with this strategy is the assurance that the results will be those that were desired. In some circumstances, removal of the leader will cause the desired power vacuum and immobilize the countries decision-making ability and stop the action. The problem is the actual outcome may not match the desired action. This could occur if someone as determined to pursue the original course of action replaces the leader. If the power vacuum was filled quickly the attack would not accomplish what it was designed to do. The new leader may even be able to use the removed leader as a

martyr to rally his country so they would pursue the course of action with more vigor than they would have before.

A denial of leadership strategy can be fast and highly effective during a time-critical decisive halt, but it will be difficult due to the difficulty of locating and striking the proper target. The most important information, vital to the success, is an understanding of the power structure of the enemy. Only with this understanding can the desired results be achieved. The danger of the results of a missed target or a rapid change of government could very well make any task more difficult in the end.

Summation of Options

The final section of this chapter is designed to summarize the different options in order to succinctly view them as the conclusions are being reached in chapter 5. Key phases will be listed pointing out the advantages and disadvantages of each and an overall evaluation.

Table 1. Summary of options

Option	Coercion of Leader	Coercion of Faction	Coercion of Population	Denial of Military	Denial of Infrastructure	Denial of Leadership
Advantage	(1) Small target set	(1) Small target set (2) Small group more susceptible to coercion that leader or population		(1) Effects will be noticed and known by military and political leaders quickly (2) Reduction in military capability results in less ability to accomplish mission	(1) Good ability to analyze and target the infrastructure (2) Can effect every element of the military and population	(1) Will result in a rapid effect. (2) Could result in power vacuum that stops action.
Disadvantage	(1) Leader, due to the position is going to be tough to coerce (2) Coercive efforts against the leader may enable that person to put himself or herself up as a martyr.	(1) Proper identification of the group to be targeted. (2) Amount of time necessary to coerce them enough to force the leader to stop action	(1) Difficult to target such a large target set (2) Population is inherently resistant to coercion (3) Population is slow to recognize the severity of punishment inflicted	(1) Protected targets (2) Difficult to pinpoint specific military capability that will work in a time-critical manner	(1) Due to large target set, lend to a longer campaign (2) Effect may not be felt for quite a while during infrastructure attacks.	(1) Difficulty in finding and striking target (2) May have harmful effect if attack is unsuccessful (3) May have non anticipated effect on leadership
Summary	Easy for planning, but may be difficult to do quickly due to the leaders resistance to coercion	With the small target set, probably the best option of the coercive strategies, though the ability to do it in a time-critical way is suspect.	For a time-critical operation this option does not hold much promise	Could be highly effective if a small target set can be identified and attacked due to rapid effect.	Large target set makes this a hard problem and makes the possibility of the effects being felt quickly and therefore ending the campaign quickly not likely	Good option in terms of speed of effects but very difficult to employ and be sure of success

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This thesis examined one aspect of a new part of United States Air Force doctrine, the decisive halt. AFDD-1 discusses an operational phase of a campaign where overwhelming aerospace power is applied to force the enemy to culmination. This phase is called a decisive halt. The thesis evaluated possible strategies in order to determine which targeting strategies might work the best in a decisive halt. The analysis was conducted looking at an even more specific operation, one in which time was a critical element. This analysis lead to the development of the following primary and secondary questions.

Primary Question: What is the optimal targeting strategy for a time-critical decisive halt phase?

Secondary Question: What is the goal of a decisive halt in relation to developing a targeting strategy?

Tertiary Question: What is the proper definition of culminate?

Secondary Question: What different targeting strategies can be employed?

Tertiary Question: What overall theories do past theorists present?

Tertiary Question: What theories do present theorists present?

Secondary Question: What is the effectiveness of each of these strategies in a time-critical decisive halt phase?

Tertiary Question: What are the effects of each strategy?

Tertiary Question: How would each strategy work in a time-critical operation?

The thesis looked at past and present airpower theories to see if there was common ground in which to divide strategies for executing a time-critical decisive halt. Six strategies were determined and then evaluated for their applicability in this type of operation. Positive and negative aspects were examined and finally arraigned in a table at the end of chapter 4.

Conclusions

The analysis in chapter four revealed the positive and negative factors associated with each option but did not show a clear order in which these strategies should be considered. There is no quantitative first choice for a decisive halt in a time-critical environment. Most options have positive factors and they all have negatives associated with their planning or execution. The conclusions reached have been determined using qualitative analysis to determine their ranking. The rankings are designed to provide a framework for a strategist when considering options. Following the list is the explanation for the selected order:

List of Strategic Options In Order of Theoretical Viability

1. Denial of Leadership
2. Coercion of Faction
3. Coercion of Leadership
4. Denial of Military
5. Denial of Infrastructure
6. Coercion of the Population

Denial of leadership is first in the list because it has the capability to accomplish the goal of a time-critical decisive halt in the shortest amount of time. The analysis

shows that this option stands out from the rest in its ability to produce a result in a short amount of time. The problems with this option almost remove it from the top spot for it may be both difficult to achieve and difficult to predict when the exact results that will occur. It remained as the number one option because none of the other options have the ability to ensure quick results. Great care must be used if this option is being considered.

Coercion of the faction is second because it has the advantage of a smaller target set that is not offset by a leader's resistance to coercion. The smaller target and the faction's ability to influence the leader give this option the ability to work faster than most. This option also does not have as many negative attributes as the third ranked option, coercion of the leadership.

Coercion of the leadership is third because, though there is a good possibility that it might not work, it has the capability to accomplish its task in a short time. The smaller target set associated with influencing one person is a positive aspect of this option that raised it near the top. Moving it down to third were the negative aspects including the natural resistance a leader has to coercion and the possibility that the coercive actions will be used to strengthen a political position rather than submit to coercion.

Denial of military is fourth because of the difficulty of affecting a military in a time-critical manner. The military equipment will most likely be dispersed and therefore harder to locate and target; also the factor that military personal are more prepared to accept losses than the civilian population make this option difficult to accomplish in a short amount of time. Another factor making this option difficult is that the military equipment will probably be better guarded than the civilian infrastructure or production equipment.

Denial of infrastructure is next to last because of the time it takes for effects to the infrastructure to influence an enemy campaign. Though the targets tend to be more static than military targets, it will take a while for damage to the infrastructure to affect either the leader, population, military, or a faction enough to force a change in action in a time-critical way.

Coercion of the population is last due to the difficulty of accomplishing any influence of a large body of people and the time it takes to accomplish. The analysis in chapter four found that there were no aspects to this option that were positive for a time-critical decisive halt. This lack of positive factors was compounded by the negative aspects such as the size of the target set and the natural resistance of a population to coercion. Unlike most of the other options this option was fairly straightforward to place in the last position.

This thesis sought to answer what the targeting considerations for a time-critical decisive halt are. An evaluation of all of the options available to the planner has made one point abundantly clear, that rapid and decisive combat operations from the air are difficult. The analysis shows that many factors must be taken into account when considering each option to ensure that the effects produced are the desired ones. The options available for planners attempting a time-critical decisive halt are limited and in many cases none may be effective.

Recommendations for Further Study

This thesis opens the way for more questions than it attempts to answer. Its inclusion of time as an element of analysis may mean the conclusions are only applicable

to that situation. In the paragraphs below I try to list some of the areas this thesis either delimited from the topic or areas where the research generated a new area of study.

One of the questions that could now be asked is, How the conclusions would change if time were not seen as a critical factor? Many of the categories were put low in the order of options based on the fact that the strategy could not be effective in a time-critical manner. Follow on thinking about a situation where time is not critical could radically change the prioritization of options.

A question that is not discussed in this thesis that is limited by the U.S. Air Force definition of decisive halt is how all options would change based on removing the restriction of airpower alone. Joint operations that included naval and ground forces might be able to bring different pressure or cause different effects than an air-only campaign. This analysis would be applicable for both a time-critical and non time-critical situations.

Another path of study would be the affects politics would play on the applicability of any option. Political considerations may help or hinder any of the options by either bringing more pressure or not allowing full pressure to be applied. This variable, along with others such as economic impact and military capability would play an important part in strategy determination.

These areas for future research are but some of the questions and areas this thesis has raised. The application of airpower is a complex art that requires the consideration of may facets and capabilities.

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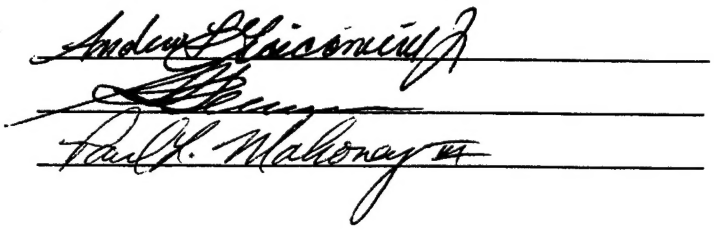

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